

Pre-AP Chemistry Summer Assignment
For the 2018-2019 School Year
Mrs. Level

Pre-AP Chemistry students are expected to address certain selected topics independently during the summer in preparation for the class. Your summer assignment is to learn certain elements and their symbols and polyatomic ions, their formulas and charges. You will take a test over the elements and their symbols and a test over the polyatomic ions and their formulas and charges during the first week of school.

The requirements for enrollment in Pre-AP Chemistry includes making a minimum grade of 70 on each of the two tests.

Summer Assignment:

- 1. Learn the elements' names and their symbols for the first 80 elements on the periodic table** (hydrogen through mercury). Symbols are written in block capital letters with the first letter written in uppercase (capitalized) and the second letter written in lowercase. For example, hydrogen's symbol is H; helium's symbol is He. The name of the element does not have to be capitalized, but it must be spelled correctly to receive full credit on the exam. **You do not have to memorize the element's atomic number, only the element's name and its symbol.** A list of the first 80 elements is attached.
- 2. Learn the names, formulas, and charges of thirty five polyatomic ions.** A list of these polyatomic ions is attached. The polyatomic ions' symbols and charges should be written as shown on the attached list. (The charge is the superscript in the upper right hand corner). For example, the symbol for the polyatomic ion *ammonium* is NH_4^{+1}
- 3. You will be tested over the elements and their symbols and the names of the polyatomic ions, during the first week of school** (but **not** the first or second day you return to school). **These tests will be two major grades.** On these tests the student will be given the element's name and asked to correctly write its symbol **or** may be given the symbol and asked to write the name of the element. For the polyatomic ions, the student will be given the polyatomic ion's formula (symbols, numerical subscript) and charge, and asked to write its name or may be given the polyatomic ion's name and asked to write its formula (symbols, numerical subscript) and charge. Names must be spelled correctly to receive full credit on the exam.

Atomic Numbers, Elements, and Symbols

You do not need to know the atomic number, only the element and its symbol.

<u>Atomic Number</u>	<u>Symbol</u>	<u>Name</u>
1	H	Hydrogen
2	He	Helium
3	Li	Lithium
4	Be	Beryllium
5	B	Boron
6	C	Carbon
7	N	Nitrogen
8	O	Oxygen
9	F	Fluorine
10	Ne	Neon
11	Na	Sodium
12	Mg	Magnesium
13	Al	Aluminum
14	Si	Silicon
15	P	Phosphorus
16	S	Sulfur
17	Cl	Chlorine
18	Ar	Argon
19	K	Potassium
20	Ca	Calcium
21	Sc	Scandium
22	Ti	Titanium
23	V	Vanadium
24	Cr	Chromium
25	Mn	Manganese
26	Fe	Iron
27	Co	Cobalt
28	Ni	Nickel
29	Cu	Copper
30	Zn	Zinc
31	Ga	Gallium
32	Ge	Germanium
33	As	Arsenic
34	Se	Selenium
35	Br	Bromine
36	Kr	Krypton
37	Rb	Rubidium
38	Sr	Strontium

39	Y	Yttrium
40	Zr	Zirconium
41	Nb	Niobium
42	Mo	Molybdenum
43	Tc	Technetium
44	Ru	Ruthenium
45	Rh	Rhodium
46	Pd	Palladium
47	Ag	Silver
48	Cd	Cadmium
49	In	Indium
50	Sn	Tin
51	Sb	Antimony
52	Te	Tellurium
53	I	Iodine
54	Xe	Xenon
55	Cs	Cesium
56	Ba	Barium
57	La	Lanthanum
58	Ce	Cerium
59	Pr	Praseodymium
60	Nd	Neodymium
61	Pm	Promethium
62	Sm	Samarium
63	Eu	Europium
64	Gd	Gadolinium
65	Tb	Terbium
66	Dy	Dysprosium
67	Ho	Holmium
68	Er	Erbium
69	Tm	Thulium
70	Yb	Ytterbium
71	Lu	Lutetium
72	Hf	Hafnium
73	Ta	Tantalum
74	W	Tungsten
75	Re	Rhenium
76	Os	Osmium
77	Ir	Iridium
78	Pt	Platinum
79	Au	Gold
80	Hg	Mercury

POLYATOMIC IONS

<u>Name</u>	<u>Formula & Charge</u>
1. Ammonium	NH_4^{+1}
2. Acetate	$\text{C}_2\text{H}_3\text{O}_2^{-1}$
3. Carbonate	CO_3^{-2}
4. Bicarbonate	HCO_3^{-1} (This polyatomic ion is also known as hydrogen carbonate)
5. Chromate	CrO_4^{-2}
6. Dichromate	$\text{Cr}_2\text{O}_7^{-2}$
7. Cyanide	CN^{-1}
8. Hydroxide	OH^{-1}
9. Hydronium	H_3O^{+1}
10. Nitrate	NO_3^{-1}
11. Nitrite	NO_2^{-1}
12. Sulfate	SO_4^{-2}
13. Sulfite	SO_3^{-2}
14. Oxalate	$\text{C}_2\text{O}_4^{-2}$
15. Permanganate	MnO_4^{-1}
16. Phosphate	PO_4^{-3}
17. Perchlorate	ClO_4^{-1}
18. Chlorate	ClO_3^{-1}
19. Chlorite	ClO_2^{-1}
20. Hypochlorite	ClO^{-1}
21. Hydrogen Phosphate	HPO_4^{-2}
22. Thiosulfate	$\text{S}_2\text{O}_3^{-2}$
23. Peroxide	O_2^{-2}
24. Dihydrogen Phosphate	$\text{H}_2\text{PO}_4^{-1}$
25. Arsenate	AsO_4^{-3}
26. Thiocyanate	SCN^{-1}
27. Silicate	SiO_3^{-2}
28. Selenate	SeO_4^{-2}
29. Diphosphate	$\text{P}_2\text{O}_7^{-4}$
30. Amide	NH_2^{-1}
31. Azide	N_3^{-1}
32. Tartrate	$\text{C}_4\text{H}_4\text{O}_6^{-2}$
33. Hydrogen Sulfate	HSO_4^{-1} (This polyatomic ion is also known as bisulfate)
34. Molybdate	MoO_4^{-2}
35. Phosphite	PO_3^{-3}